

REMARKS

Applicant has filed this Amendment and Response in reply to the outstanding Official Action dated May 19, 2006 and Applicant believes that the instant Amendment and Response is fully responsive to the Official Action for at least the reasons set forth herein.

At the onset, Applicant notes that Claims 16 and 17 have been added to the application for examination. Claims 16 and 17 are directed to defining carrier sensing points for the reception and transmission slots. No new matter has been added by way of the aforementioned new claims. For example, support therefor can be found in Figure 5 and page 21. Applicant submits that the new claims are patentably distinct from the cited references, whether taken alone or in any combination thereof.

In the outstanding Official Action, the Examiner rejected Claims 1, 2, 6, 7, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Hamalainen, United States Patent No. 5,966,378.

Applicant respectfully disagrees with the rejections and traverses with at least the following analysis.

Hamalainen does not teach performing carrier sensing on both the transmission and reception time slots, as recited in independent Claims 1, 6, and 11.

Hamalainen only teaches carrier sensing for a first direction of communication, i.e., detecting a first time slot. Based upon the detection, a time slot is selected for the second time slot which will not overlap the first time slot. See Abstract. Furthermore, throughout the reference, the reference discusses detection of one time slot and selecting a second time slot based upon the detection. The second time slot is different than the first to avoid collision. However, two detections are not disclosed, e.g., reception and transmission.

The reference discloses two embodiments for avoiding collision. In the first embodiment, the mobile station performs the detection. “The method according to the invention, of which two embodiments were hereinbefore described, can be realized with a device used in time divided two-way communication, which device comprises means for detecting the time slot used in the first direction of communication and means for selecting the time slot for the second direction of communication, based upon the detection, in such a way that it will not overlap said first time slot.” Col. 3. lines 56-64.

According to the first embodiment, the reference states that the mobile station has the means for **detecting the time slot used in the downlink** and means for selecting the uplink time slot, based on the detection, so that it will not overlap the time slot used in the downlink.

According to the second embodiment, the reference states that in order to avoid collisions, the network reads from a transmission the authentication of the mobile station and **detects the time slot used in the uplink** and selects for transmission in the downlink a time slot that will not overlap the uplink transmission. In connection with the channel request PRA in the uplink from a mobile station MS, a base station BTS reads the authentication of the mobile station from the channel request burst PRA and detects the time slot used in the uplink and selects a time slot for transmission in the downlink to the mobile station in question which does not overlap the uplink transmission.

For the realization of this second embodiment the network, e.g., a **base station BTS has means for detecting the time slot used in the uplink** and means for selecting the downlink time slot, based upon the detection, so that the downlink time slot will not overlap the time slot used in the uplink. Cols. 7-8.

Therefore, the reference does not disclose that the mobile station includes both a means for detection of the uplink time slot and a means for detection of the downlink timeslot.

In stark contrast the claimed invention is directed to a method, apparatus and system that detects (carrier sensing) both the transmission and reception time slot.

The mobile station includes a means for performing carrier sensing not only for the reception slot of the mobile station, but also a transmission slot simultaneously in response to designation of a communication frequency and slot by the base station.

By performing carrier sensing for both the transmission slot and the reception slot, the mobile station is prevented from using a communication carrier that has already been used by other mobile station located near the mobile station.

Therefore, the claimed invention solves a different problem than the prior art reference. The prior art reference solves the problem of transmitting and receiving to and from a base station on the same time slot, i.e., uplink and downlink communication.

In other words, avoiding a collision in the bi-directional communication. However, the **prior art cannot solve the problem of interference by other mobile devices**. Since Hamalainen is not concerned with interference by other mobile devices, there is no need to detect both the transmission and reception slot. Once a first direction is detected, the second direction is selected to avoid the collision. Hamalainen states that collisions may occur between different data flows or between the packets of the same connection, if, e.g., a mobile station acknowledges the previous transmission, whereby the acknowledgement in the uplink and the next transmission in the downlink may collide. This kind of a situation is presented in FIG. 1 in which downlink and uplink transmissions are independent of each other and, in the figure in the center TDMA frame, the uplink and downlink have simultaneous **communication to and from the same mobile station** resulting in a collision wherein at least one of the transmissions is lost.

Hamalainen is not concerned with collisions that might occur with two different mobile stations communicating on the same transmission time slot. In contrast, the claimed invention

has an advantage that interference between two different mobile stations will not be caused even when two mobile stations are in close proximity to each other. Specifically, by using the claimed method and apparatus when a transmission slot of the mobile device is already used by another device or when another mobile device moves close to the mobile device after initiation of a communication, radio interference will be prevented, whereas in the prior art, this type of interference will still occur.

Accordingly, the cited reference fails to teach, suggest or render obvious a means for performing carrier sensing of a communication frequency designated by a base station and a reception slot, and means for performing carrier sensing of a transmission slot prior to transmission of a signal to avoid collision as recited in Claim 1; performing carrier sensing of a communication frequency designated by a base station and a reception slot; and performing carrier sensing of a transmission slot, as recited in Claim 6; means for performing carrier sensing of a communication frequency designated by a base station and a reception slot, and means for performing carrier sensing of a transmission slot, as recited in Claim 11.

Therefore, since the reference fails to teach, suggest or render obvious each and every limitation of Claims 1, 6, and 11, the claims are patentably distinct from Hamalainen.

Additionally, based at least upon similar reasons, the reference fails to teach a means for initiating communication when non-use is judged in **both carrier sensing**, as recited in Claims 2 and 12 and initiating communication when non-use is judged in **both carrier sensing**. Hamalainen does not teach carrier sensing for both reception and transmission time slots for the reasons set forth above.

Therefore, Claims 2 and 12 are patentably distinct from Hamalainen.

The Examiner rejected Claims 3, 8, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Hamalainen in view of Maxemchuk, United States Patent No. 6,219,346.

Applicant respectfully disagrees with the rejections and traverses with at least the following analysis. In addition to the reasons set forth above, the claims are patentably distinct from the cited hypothetical combination for the following reasons. Firstly, Maxemchuk does not cure the aforementioned deficiencies with respect to the primary reference.

Secondly, there is no motivation to combine the references. *Pro arguendo*, even if there was a motivation to combine the references, the hypothetical combination fails to teach all of the claimed limitations. Specifically, the cited combination fails to teach, suggest or render obvious the limitation of “**setting of reception electric field level as judgment condition** of non-use is provided individually to perform carrier sensing on the basis of each of said reception electric field levels.” At best, Maxemchuk teaches that the identification of a collision condition is based upon a detection of the presence of a signal from another unit. The detection of a signal does not suggest setting a specific level as a judgment condition. The setting of a threshold level is a specific way of detecting the presence of a signal, but is not the only way. Therefore, Maxemchuk does not expressly or inherently teach setting of reception electric field level, rather the reference just teaches determining the presence or absence of a signal.

Accordingly, Claims 3, 8 and 13 are patentably distinct from the cited combination.

Additionally, the Examiner rejected Claims 4, 5, 9, 10, 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Hamalainen in view of Maxemchuk and Chapman et al., United States Patent No. 4,775,995 (hereinafter “Chapman”).

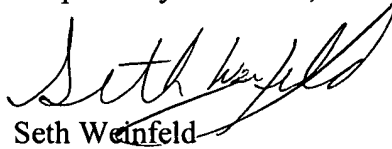
Applicant respectfully disagrees with the rejections and traverses with at least the following analysis. Claims 4, 5, 9, 10, 14, and 15 are patentably distinct from the cited combination based upon their dependency, whether directly or indirectly, from independent Claims 1, 6, and 11, respectively, in view of the analysis set forth above with respect to Claims 1, 6, and 11. Applicant further submits that new Claims 16 and 17 are patentably distinct from

the cited references based at least on their dependency from Claim 6 in view of the analysis set forth above with respect to independent Claim 6.

In view of the foregoing, Applicant respectfully requests that the Examiner withdraw the rejections of Claims 1-15 pursuant to 35 U.S.C. § 103(a) and allow new Claims 16 and 17.

Accordingly, the Applicant believes the above-identified application is in condition for allowance and henceforth respectfully solicits the allowance of the application. If the Examiner believes a telephone conference might expedite the allowance of this application, the Applicant respectfully requests that the Examiner call the undersigned, Applicant's attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Seth Weinfield", written over a horizontal line.

Seth Weinfield
Registration No. 50,929

Scully, Scott, Murphy & Presser, P.C.
400 Garden City Plaza Suite 300
Garden City, NY 11530
(516) 742-4343
SW:ae/tam